

II. CLAIM AMENDMENTS

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1. (Previously Presented) A method for transmitting digital information in the form of consecutive symbols over a transmission channel susceptible for intersymbol interference, comprising, in the following order, the successive steps of;

- a) encoding the digital information to be transmitted with an outer code,
- b) pseudorandomly interleaving the encoded digital information to be transmitted,
- c) encoding the interleaved encoded digital information with a recursive inner code and in conjunction therewith memoryless modulating the encoded interleaved encoded digital information onto a carrier, and
- d) transmitting the carrier containing the memoryless modulated encoded interleaved encoded digital information.

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2. (Cancelled)

3. (Original) A method according to claim 1, wherein the recursive inner code in step c) is a differential code.

4. (Previously Presented) A method according to claim 3, wherein step c) comprises modulating the interleaved encoded

digital information onto a carrier using a differential modulation method.

5. (Original) A method according to claim 1, wherein the outer code in step a) is a convolutional code.

6. (Original) A method according to claim 5, wherein the outer code in step a) is a serial concatenated convolutional code.

7. (Previously Presented) A method for transferring digital information in the form of consecutive symbols from a transmitter over a transmission channel susceptible for intersymbol interference to a receiver, comprising, in the following order, the successive steps of

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- a) encoding the digital information to be transmitted with an outer code,
 - b) interleaving the encoded digital information to be transmitted,
 - c) encoding the interleaved encoded digital information with a recursive inner code and in conjunction therewith memoryless modulating the encoded interleaved encoded digital information onto a carrier, and
 - d) transmitting the carrier containing the memoryless modulated encoded interleaved encoded digital information,

- e) receiving the transmitted carrier containing the memoryless modulated encoded interleaved encoded digital information,
- f) producing an estimate of the characteristics of the transmission channel,
- g) converting the received carrier into consecutive symbols in a SISO equalisation process using the produced estimate of the characteristics of the transmission channel,
- h) deinterleaving the consecutive symbols, and
- i) decoding the deinterleaved consecutive symbols in a SISO decoding process.

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8. (Original) A method according to claim 7, additionally comprising a number of iterations through steps g), h) and i) as well as a step of reinterleaving between steps i) and g), wherein said number is at least 2.

9. (Original) A method according to claim 7, wherein the SISO equalisation process of step g) works over the combined Trellis of the recursive inner code and modulation of step c) and the nonrecursive intersymbol interference characteristics of the transmission channel.

10. (Currently Presented) A transmitter for transmitting digital information in the form of consecutive symbols over a transmission channel, comprising:

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- a) an outer encoder for encoding the digital information to be transmitted with an outer code, said outer encoder having an input and an output,
 - b) a pseudorandom interleaver for interleaving the encoded digital information to be transmitted, said interleaver having an input and an output of which the input is coupled to the output of the outer encoder, and
 - c) a recursive inner encoder and a memoryless modulator unit for encoding the interleaved encoded digital information with a recursive inner code and in conjunction therewith memoryless modulating the encoded interleaved encoded digital information onto a carrier, said recursive inner encoder and a memoryless modulator unit having an input and an output of which the input is coupled to the output of the interleaver.

11. (Cancelled)

12. (Original) A transmitter according to claim 10, wherein said recursive inner encoder and modulator unit forms an integrated structure.

13. (Original) A transmitter according to claim 12, wherein said integrated structure is a differential modulator.

14. (Original) A transmitter according to claim 12, wherein said integrated structure is a Trellis Coded Modulator.

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15 - 18 (Cancelled)
